

## APPALACHIAN CLIMATE TECHNOLOGY (ACT) NOW – BUILD BACK BETTER CHALLENGE

The non-profit **Coalfield Development Corporation** of West Virginia is joined with a robust coalition to develop North America's premier climate resilience cluster in what used to be coal country. The businesses created, the workers trained, and the physical spaces transformed by this project will build on WV's key Appalachian assets to diversify local economies, create quality jobs across the workforce spectrum, reduce climate emissions, and rebuild struggling communities at a transformational scale. Coalfield Development, which has been working innovatively (including with EDA, ARC, EPA and the philanthropic community) to revitalize the economy in coal-impacted communities throughout West Virginia for the past decade, will lead the **"Appalachian Climate Technology" (ACT) Now** coalition. The ACT Now Coalition seeks a \$500,000 Phase 1 U.S. Economic Development Administration (EDA) Build Back Better Regional Challenge (BBBRC) award to conduct the planning, capacity-building, feasibility analyses, and design/engineering necessary to launch a \$95.635 million Phase 2 BBBRC initiative (\$66.5M in EDA resources plus \$29.135M in match) and create 3,000+ quality jobs and a more sustainable future for the nation's most coal-impacted region.

**Vision for a WV Climate Technology Growth Cluster** - ACT Now will scale proven WV approaches to green technologies and create a vibrant growth sector via solar manufacturing and installations, sustainable mineland reclamation and reuse, green buildings, advanced technology manufacturing, food and agro-forestry, biobased products, and outdoor recreation.

**Economic Opportunities**— The ACT Now region is recognized by the U.S. Intergovernmental Council on Energy Communities as the most economically distressed and coal-impacted area in the country – and indeed includes the most-impacted energy communities in America (#1 Southern West Virginia, #2 East Kentucky, #3 Wheeling WV, #24 Charleston WV).

Yet the potential for economic opportunities through innovative sectoral and workforce strategies is tremendous. The World Resource Institute's July 2021 report on "The Economic Benefits of the New Climate Economy in Rural America" finds the potential to support 1.3 million job-years in rural jobs across the nation, generating \$21.7 billion per year in overall value added to rural economies in places like WV, through development of clean energy systems, remediation of abandoned fossil fuel sites, restoration of healthy landscapes, and enhancements to community resilience. WRI's report finds that every \$1 million invested through new climate economy pathways would generate 17.5 jobs and \$1.5 million in value added in rural economies. In September 2021, Rocky Mountain Institute issued findings from its "Seeds of Opportunity" report, declaring "Appalachia Poised to Become Clean Energy Country" where "solar-driven economic development could generate tens of billions of dollars for most regions of the country . . . and the benefits in Appalachia-which centers on West Virginia, Kentucky, and Ohio-are the greatest of any US region." The Nature Conservancy echoes this vision of opportunity, and identifies central Appalachia as one of the top three most important ecosystems in the world for climate change mitigation and carbon capture. The social enterprises and job skills programs at Coalfield have produced 1,500 professional job certifications and 525 new full-time jobs in skilled career pathways, including through the backing of a burgeoning ReWire Appalachia solar roof industry. Generation WV has placed young, skilled workers into growth industries through its employer engagement strategies, and Advantage Valley and the WV Hive have boosted sector-based entrepreneurship across southern WV through efforts hatched with EDA backing. The state's leading academic innovators (WVU & Marshall University) are sparking sector innovation. **These ACT Now partners are ready to scale** with a sectoral growth strategy for climate resilience, clean energy, and green technologies, through a build back better endeavor.

### ACT Now Coalition Members, Roles & Commitments

- **Coalfield Development Corporation**: EDA Phase 1 lead & Regional Economic Competitiveness Officer; lead on Phase 2 projects ReWire Appalachia and the Climate Technology Training Academy in Logan; key on Climate Resilience Workforce project. Supported by:
  - **Invest Appalachia** and **Natural Capital Investment Fund (now Community Partners)** on the design and operation of Phase 2's ReWire Appalachia revolving loan fund
  - **Central Appalachian Network** on biobased products aspects of Workforce project
- **City of Charleston**: Lead on Phase 2's Charleston-Kanawha Sustainable Innovation Center

- Supported by **Advantage Valley** and **Central West Virginia Regional Airport Authority**, with roles to bring all-electric, zero-emissions airplane manufacturer to center.
- **City of Huntington, WV:** Lead on Phase 2's H-BIZ project, supported by the **Huntington Municipal Development Authority** and the **Huntington Area Development Council**
- **West Virginia University:** Lead on Phase 2's Sustainable Mineland project, supported by:
  - **The Nature Conservancy, Grow Ohio Valley,** and the **West Virginia Land Trust** will each be involved in overall Phase 2 Sustainable Minelands project plus specific pilots
- **Generation West Virginia:** Lead on Phase 2's Climate Resilient Workforce, supported by:
  - Expansion of **Coalfield Development's** 33-6-3 on-the-job training model
  - **Alliance for Economic Development of Southern West Virginia at Marshall University** ("WV Southern Alliance"), and **Energy Efficient WV** will lead green building component, in partnership with 11 WV community colleges and universities under MOU
  - **International Brotherhood of Electrical Workers Local 317** and **WV Carpenters Union** will both be involved in worker hiring, training and placement on these ACT Now projects
- **West Virginia Community Development Hub:** Lead on Phase 2 Community GreenPrints project, supported by the WV Brownfield Assistance Centers at WVU and Marshall University
- **Advantage Valley:** Lead on Phase 2's GREENER WV project with support at the **WV Hive** of the **New River Gorge Regional Development Authority**
- Support and potential Phase 2 match funding from the **Claude Worthington Benedum Foundation** and the **Just Transition Fund**

**ACT Now Projects** – The ACT Now coalition's key partners plan to move forward with the following seven (7) interrelated and mutually supportive EDA Phase 2 projects:

- 1) **REWIRE APPALACHIA** – Lead Coalfield will partner with the WV Southern Alliance, Invest Appalachia, competitively procured solar installers, and others to lead the "ReWire Appalachia" program initiative to increase solar deployments by 10x in WV to \$100+ million annually:
  - Coalfield Development will work under MOU with experienced finance partners to establish a \$10 million "**Rewire Appalachia**" revolving loan fund to help small businesses and non-profits access low-cost capital and tax incentives for solar roof and distributed solar deployments. The project will deploy 750+ solar roof and distributed solar projects annually, including at **reclaimed coal mines, brownfields & closed power plants** at 3-5 pilot sites, to transform WV's energy landscape.
  - Coalfield Development and the City of Huntington will prepare the **Huntington Brownfield Innovation Zone (H-BIZ) for the onshoring of a new solar-roof technology manufacturing factory.**
- 2) **ABANDONED MINES TO SUSTAINABLE LANDS** – West Virginia University will lead the "Abandoned Minelands to Sustainable Lands" program to boost the under-achieving pace of abandoned mine reclamation in WV and Appalachia with new approaches to sustainable reuse of these lands, with an initial goal of 50,000 acres put into reuse:
  - WVU's Energy Institute will launch the "**Sustainable Minelands Reuse**" program to utilize abandoned mines for productive reuses focused on solar/wind/geothermal generation, energy storage (including small-scale pumped hydroelectric storage, compressed air energy storage in deep subsurface mines, and thermal electric storage), agro-forestry for carbon capture and for biomass/bioenergy production, healthy food production, rare earth element development, co-located manufacturing or, eco-tourism and outdoor recreation.
  - WVU's Mountain Hydrology Lab will establish a "**Sustainable Minelands Assessment**" program to review and assess abandoned mine lands, mines with impending bond foreclosures, AML Pilot Economic Development opportunities, and ready-for-action communities to identify prime opportunities for deployment of sustainable mineland reuse projects.
  - Coalfield and WVU's Outdoor Economic Development Collaborative will lead a "**Sustainable Mineland Workforce**" initiative to recruit, train, and place workers on these projects.
  - WVU's "Start Up WV" and the Bridge Initiative will lead the "**Sustainable Minelands Technology Commercialization**" initiative to conduct R&D and commercialization projects to bring promising sustainability technologies to Appalachia's mine-scarred lands.
  - Sustainable mine reuses will be piloted on 3-5 specific projects where site control is already obtained including: a wellness center with innovative solar generation located along the Hatfield-McCoy Trails at the **Highwall** in Mingo County; the **Hobet Mine**; and the **Edible Mountain** healthy

food, environmental education & eco-tourism project on an abandoned mine in a low-income neighborhood overlooking downtown Wheeling, WV.

- 3) **HUNTINGTON BROWNFIELDS INNOVATION ZONE (H-BIZ)** – H-BIZ is 100 acres of vacant manufacturing brownfields in the heart of downtown Huntington which have been made ready for a new high-tech center for advanced manufacturing, R&D-focused businesses associated with Marshall University, and other high-wage jobs. Lead the City of Huntington Municipal Development Authority will prepare the site and upgrade its infrastructure to welcome a potential onshore of a new solar PV manufacturing plant; upgrade three historic buildings for technology reuse, and build a new, 50,000 square feet HBIZ Technology Center (expandable to 100,000 square feet) to welcome ACT Now technology investments, creating 100+ jobs.
- 4) **CHARLESTON-KANAWHA SUSTAINABLE INNOVATION CENTER**– The City of Charleston and lead Advantage Valley will transform the 8-acre, 110,000 sq. ft. idled Kanawha Manufacturing plant in a low-income neighborhood in the heart of the city. Kanawha Manufacturing Co. began building equipment for the WV coal mines in 1902, and expanded in the power generation aftermarket in 1960s. It has reached its last generation of owners who now seek a close out strategy. Through ACT, Advantage Valley and Charleston will transform this site into a new 100,000 square feet, \$9.2 million **Coalfield Jobs training center**, along with the **Healthy Food Commercial Kitchen & Food Processing Hub** and other clean-technology uses including **Battery and Component Manufacturer** for an all-electric, zero emissions airplane.
- 5) **CLIMATE TECHNOLOGY TRAINING ACADEMY IN LOGAN, WV** – Lead Coalfield is partnered with Southern Community & Technology College to transform the former, now-idled “Coal Miner Training Academy” in the City of Logan into a new “Climate Technology Training Center” managed by Coalfield, along with the first Generation WV tech training center in the southernmost coalfields. This center will use the 33-6-3 workforce model to train and upskill hundreds of workers over four years in these new climate technology sectors.
- 6) **TRAIN A CLIMATE RESILIENCE WORKFORCE** – To achieve the transformation made possible by ACT Now, the region must upgrade and expand its proven workforce development approaches, especially for young jobseekers, dislocated coal workers, minority and persistent poverty communities, and unemployed/underemployed West Virginians through the following:
  - **COALFIELD DEVELOPMENT 33-6-3 JOB TRAINING CENTERS** – Coalfield will expand its proven 33-6-3 job training model to train and prepare a new generation of “Climate Resilience Workers”. Building upon initiatives already underway, this expanded career-path training will be provided for solar installers and electricians, solar manufacturing technicians, workers in sustainable mineland reclamation and redevelopment, environmental remediation specialists and technicians, blight removal and building rehabilitation crews, green building upgrade crews, FiberForce broadband technology installers, sustainable craftsman teams (upcycling, furniture reclamation, bio-based sustainable textiles), forest and conservation technicians, healthy food production, recreational infrastructure development specialists, and other climate resilience sectors.
  - **GREEN IMPACT FELLOWSHIPS, TECHNOLOGY TRAINING & RESILIENT REMOTE WORK** – Generation WV will build upon its Impact Fellowship model to connect WV jobseekers with well-paying jobs in emerging WV climate resilient industry clusters. This model deploys individualized, intensive recruitment efforts, and hands-on support to job seekers, matching them will jobs that fulfill the needs of climate resilient technology employers. Generation WV will expand the wrap-around service model provided to Impact Fellows to support graduates of ACT Now skills and job training programs, promoting job retention and advancement for employees in new ACT Now fields. Also during Phase 2, Generation WV and Ascend WV will deploy the results of an ongoing EDA-supported remote work study to enhance components of our Impact Fellowship, WV Jobs Network, and NewForce software development certification programs to expand availability and accessibility of remote work opportunities in climate resilient jobs in southern WV.
  - **GREEN BUILDING WORKFORCE** – The **WV Southern Alliance at Marshall University** will scale its established programs to train a new generation of energy auditors, energy efficiency upgrades, and green building technicians who will be deployed to 11 college campuses needing retrofits. This initiative will be supported and conducted with the non-profit partner **Energy Efficient West Virginia**. Marshall’s Southern Alliance has an established MOA with 11 community college,



technical college, and 4-year universities in the ACT Now region, to assess the energy-saving potential of green building improvements at hundreds of buildings on these campuses.

- 7) **PLACE-BASED “COMMUNITY GREENPRINTS” & “GREENER WV” ENTREPRENEURIAL SUPPORT** – West Virginia coalfield communities will not be able to take advantage of sector diversification and growth without significant capacity building, strategic planning, downtown revitalization, and site and brownfields preparation in a strategically aligned way. Business attraction strategies are increasingly aligned with community revitalization efforts as vibrant communities are best positioned to attract and retain businesses and talent. We need to prepare the places and spaces in struggling WV communities to be ready to receive this sector growth, and the Hub and ACT Now will use BBBRC resources to:
- **COMMUNITY GREENPRINTS** – Working with local community leaders, the WV Hub will support local volunteer Long-Term Planning and Resiliency Teams to create local “GreenPrint” plans that integrate climate resiliency and climate disaster preparedness with economic development planning, entrepreneurial development, BAD buildings upgrades and brownfields revitalization strategies, and long-term strategic planning and investment development to address urgent infrastructure needs. The need for this strategic planning process and the development of long-term rural climate resiliency GreenPrints is urgent as distressed, rural West Virginia communities are persistently overwhelmed by climate disasters including flooding, heat waves, increasingly extreme snowstorms and vulnerable power grids.
  - **BAD BUILDINGS & BROWNFIELDS REVITALIZATION FOR APPALACHIAN CLIMATE TECHNOLOGIES DEPLOYMENT** – The WV Brownfield Assistance Centers at WVU and Marshall University will identify **BAD Buildings (Brownfields-Abandoned-Dilapidated)** in the region’s downtown areas, to prioritize sites and communities for productive reuse as green-tech hubs for green collar jobs produced through ACT Now sectoral initiatives.
  - **ENTREPRENEURIAL & SMALL BUSINESS DEVELOPMENT THROUGH “GREENER WV”** – ACT Now will identify and facilitate opportunities for new “Green Entrepreneurs” to launch and grow businesses to leverage the need for climate resilience. Through its existing **“FASTER WV”** initiative created through EDA support and funded by ARC, **Advantage Valley** and partners including the WV SBDC use technical assistance, business coaching, entrepreneurship professional certificates and college degrees, and a low-cost revolving loan to support these start-ups. Advantage Valley will expand its entrepreneurial supports into **“GREENER WV”** to build entrepreneurship pathways for creation and expansion of climate technology startups and business. This will be done in partnership with the **WV Hive**, a program of the New River Gorge Regional Development Authority. As part of this effort, Advantage Valley and the Hive will also create and conduct strategies for marketing and business attraction.

**Metrics of Success – 3,000 new full-time jobs with regional wage increases** (including **union jobs**) including 1,000 new Coalfield trained workers with certifications/degrees and job placements, 1,000 new manufacturing jobs in Huntington and Charleston including solar manufacturing positions, 200 solar installation jobs, 300 jobs in sustainable mine reuse, 125 green collar jobs created through Generation WV employer engagement programs, 400 green building jobs, and 75 start-up and entrepreneurial jobs created by GREENER WV. **50 new businesses created** in these climate technology sectors. **\$250+ million in private sector investment** at new green factories, new green collar company investments, mineland reuse projects, and with start-up capital for entrepreneurial businesses, all **increasing regional GDP**. Massive amounts of **climate emissions reductions, mitigation & capture** (to be quantified during Phase 1 planning) through solar installations, green buildings upgrades, carbon capture forestry, brownfield revitalization, and other resilience approaches.. Most importantly, the ACT Now initiative will create a **sustainable, long-term architecture of economic transformation in this region** where solar roofs are multiplying, new approaches to productive mineland reuse are becoming more commonplace, additional demand for green building upgrades is growing, and this almost heaven WV area becomes known as a mecca for young professionals seeking green collar jobs. Using economic multiplier data from the Economic Policy Institute, we suggest that this project will create something in the order of 4.35 indirect jobs in the short term for each of the 3,000 direct jobs, for as many as 15,375 total jobs from this EDA investment, let alone from long-term growth of these sectors.

**Matching Funds & Leveraged Investments** – Despite our location in one of the poorest regions in the one of the poorest states in America and being ranked the #1 coal-impacted area, we intend to exceed our 20% match requirement for EDA Phase 2 awards. ACT Now partners have already worked to confirm cash matching funds at a level of 30% (before counting any in-kind) which will be committed, available, unconditioned and unencumbered for Phase 2 projects:

- \$15,750,000 in private sector funding to match \$18M in EDA investment (47% match) for ReWire Appalachia solar installations at small businesses and nonprofit buildings.
- \$3,750,000 in private sector funding for productive and sustainable uses of abandoned minelands to match \$15M in EDA investment (20% match).
- \$3,250,000 in local Tax Increment Finance proceeds and private company investment to match \$5M in EDA investment in the H-BIZ Technology Center in Huntington (40% match).
- \$1,250,000 Charleston, Central West Virginia Airport Authority, and other local investment to match \$5M from EDA for Charleston-Kanawha Sustainable Innovation Center (20% match).
- \$750,000 from Bloomberg Philanthropies to match \$3M in EDA investment in the Climate Technology Training Academy in Logan WV.
- \$3,635,000 from WV community colleges and university systems, private employer OTJ training contributions, Families & Workers Fund, and ARC grant funding to match \$14.5M in EDA investment (20% match) for the Climate Resilient Workforce ACT component.
- \$1,500,000 in expected funding from the Claude Worthington Benedum Foundation, participating local governments, and ARC grant funding to match \$6M in EDA Investment (20% match) for the Community GreenPrints and Greener WV components of ACT Now.

**Overcoming Barriers to Implementation** – Coalfield and ACT Now see no barriers to Phase 1 design, as we have a strong coalition which has already agreed on roles, commitments, Phase 2 project components, and allocation of the \$500,000 from EDA – all embodied in a detailed ACT Now MOU and other pre-existing MOUs. Our coalition is loaded with the talent, experience, and acumen needed to swiftly execute Phase 1 and then pivot to Phase 2, with BBBRC support. Our main barriers are systems-level and strategic more so than project-level and tactical. This is the first time we have had access to funding at a level which can actually change these systems and strategies for broader and deeper impacts. We are fully committed to making ACT Now career-defining work at truly transformational scale. To do so, we must do more than close out a grant. We must execute cutting edge innovation in record speed. In doing so, the barriers we'll have to overcome connect directly to EDA's strategic investment priorities. Achieving our goals must mean equity, yet our region suffers from some of the most inequitable disinvestment and economic oppression of any region in America. We are starting from an equity deficit and must proactively race to overcome it. In a climate-changed world with unstable markets, we must have resilience. Yet more than a century as a mono-economy largely dependent on coal, our local economies are not yet resilient at all. This project is our best hope to change that in generations. And while our workforce is among the hardest working and most loyal in the world, we are currently beset by human challenges: health disparities, Substance Use Disorder, and financial instability to name a few. Coalfield Development has changed the workforce system to address these human elements directly, but doing so for the thousands who needs such services will be a challenge.

**Implementation Timeline** – As all of the planned Phase 2 projects were already underway or in design when BBBRC was announced, an injection of Phase 1 technical resources will help ACT Now project leads be even more prepared for implementation. We plan:

- ReWire Appalachia RLF will launch in Summer 2022 and operate through 4-year EDA project.
- The programmatic components of the Sustainable Minelands initiative will be launched upon Phase 2 award, and mineland pilot projects will be conducted over 12-48 months.
- The H-BIZ Technology Center and planned solar manufacturing project will launch in Summer 2022 and be constructed within 12 months.
- The Charleston-Kanawha Sustainable Innovation Center will launch in Summer 2022 and be constructed and opened in 18 months.
- The Climate Technology Training Academy in Logan will launch upon Phase 2 award and be constructed and operating within six months.
- The Climate Resilient Workforce project (33-6-3, GreenForce & Green Impact Fellowships, and Green Building Workforce projects) will be launched and operating upon Phase 2 award.
- The Place-Based project (GreenPrints, BAD Buildings, and GREENER WV) will be launched and operating upon Phase 2 award and throughout the EDA project.

